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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,409	04/27/2001	Yoichi Seki	43877-115	7036

7590 02/11/2003
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EXAMINER

PHAM, LEDA T

ART UNIT PAPER NUMBER

2834

DATE MAILED: 02/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/830,409

Applicant(s)

SEKI ET AL.

Examiner

Leda T. Pham

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 7 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. This office action is in response to Amendment filed on 11/27/02.
2. Claims 1- 7 are presented for examination, claim 8 has been cancelled.

Drawings

3. Figure 9 - 11 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3 - 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Twaalfhoven et al (U.S. Patent No. 4,906,878) in view of Chitayat (U.S. Patent No. 4,749,921) further in view of J. W. Endress et al. (U.A. Patent No. 3,488,532).

Twaalfhoven teaches a linear motor (figure 6) with a plurality of coils (225) arranged in a line in a direction of movement, each coil having an associate coil axis (220) said coil shafts being perpendicular to the direction of motion (figure 9), and a cooling tube (210) but he ~~did~~ ^{does} not teach said cooling tube having a cross section elongated in a direction parallel to the coil axis and

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folds into which said coils are adapted to engage, said cooling tube meandering inside the plurality of coils, and cooling tube having flat shape.

However, Chitayat teaches a linear motor (figure 8) having a plurality of coils (102) and a cooling tube (134), wherein said cooling tube having a cross section elongated in a direction parallel to the coil axis and folds into which said coils are adapted to engage, said cooling tube meandering inside the plurality of coils for supporting the coils and dissipating coil heat during operation.

Moreover, J. W. Endress discloses a motor structure having flat cooling tube (33, figure 1- 2) with a cross section (figure 2) elongated in a direction parallel to the coil axis.

Since Twaalfhoven, Chitayat, and J. W. Endress are in the same field of endeavor, the purpose disclosed by Twaalfhoven and Chitayat would have been recognized in the pertinent art of J. W. Endress.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the structure of the cooling tube in Twaalfhoven's linear motor coil assembly as taught by Chitayat and J. W. Endress. Doing so would support the coils and dissipating coil heat during operation. Furthermore, it has held that a change in size or shape is generally recognized as being within the level of ordinary skill in the art (flat cooling tube). *In re Rose, 105 USPQ 237 (CCPA 1955).*

Referring to claim 3, Twaalfhoven teaches the linear motor coil assembly wherein the flat cooling tube comprises a plurality of round pipes for passing coolant, said pipes being aligned and attached in a direction parallel to the coil axis (figure 6).

Referring to claim 4, Chitayat teaches the linear motor coil assembly wherein the flat cooling tube has interleaved folds at least equal in number to the number of coils (figure 7).

Referring to claim 6, Twaalfhoven teaches the linear motor coil assembly comprising Cores (220), divided for each coil, around which the coils are wound (figure 6).

Referring to claim 7, Chitayat teaches the linear motor coil assembly comprising a base plate (13) the cores being fixed to the base plate in a line generally parallel to the direction of motion (figure 1 -3).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over combination of Twaalfhoven, Chitayat, and J.W. Endress as applied to the base claims above, and further in view of Nieves et al. (U.S. Patent No. 5,323,079).

The combination of Twaalfhoven, Chitayat, and J.W. Endress references substantially discloses the claimed invention, except for the added limitations of the flat cooling tube has a plurality of clearance holes for passing coolant.

Nieves teaches a half-coil configuration for stator having a cooling tube with a plurality of hole for passing coolant and said holes being formed in a direction parallel to the coil shafts.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to make a cooling tube having a plurality of holes as taught by Nieves for the purpose of passing coolant.

Allowable Subject Matter

7. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: the record of prior art does not show the flat cooling tube having elongated cross section the same as the length of the coils in an axial direction.

Response to Arguments

8. Applicant's arguments with respect to claims 1 - 3 have been considered but are moot in view of the new ground(s) of rejection.
9. New abstract has been inserted.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leda T. Pham whose telephone number is (703) 305-4864. The examiner can normally be reached on M-F (7:30-5:00) first Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-9176 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

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Leda T. Pham
Examiner
Art Unit 2834

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February 6, 2003

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